Effects of orthognathic surgery on cervical vertebras in skeletal class III patients

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Abstract

Background: Pharyngeal airway has been found to be change after orthognathic surgery. Cervical vertebras are skeletal parts that support the patent of pharyngeal airway.

Objectives: The aim of this study was to evaluate the cervical vertebra changes in patients with skeletal class III deformity who underwent orthognathic surgery.

Patients and Methods: Thirty-two patients who underwent orthognathic surgery at Oral and Maxillofacial Surgery Department, Mahidol University, Thailand were included in this study. The subjects were divided in two groups: group 1 underwent mandibular setback (19 patients) and group 2 underwent bimaxillary surgery (13 patients). Lateral cephalogram were taken at 3 times: preoperation (T0), immediate postoperation (T1) and 6 months postoperation (T2).

Results: The mean amount mandibular setback for group 1 and group 2 were 7.3 mm and 6.5 mm respectively. Head posture (OPT/SN) increased immediately after surgery in both group (2.8^0 in mandibular setback grouand 3.1^0 in bimaxillary surgery group). The hyoid bone displaced posteriorly and inferiorly in period T0-T1. C2 in period T0-T1 displaced posteriorly in horizontal plane (1.8 mm in mandibular setback group and 1.9 mm in bimaxillary surgery group). C3 in period T0-T1 displaced posteriorly in horizontal plane (2.9 mm in mandibular setback group and 2.4 mm in bimaxillary surgery group).

Conclusion: After orthognathic surgery in skeletal class III patients, the hyoid displaced posteriorly and inferiorly, the head posture increased, second and third cervical vertebra displaced posteriorly.

Keyword: orthognathic surgery, cervical vertebra, pharyngeal airway space, head posture

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